

**Claims as enclosed to IPER**

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**We claim:**

1. A process for fractionating a starting mixture (A) of two or more components by extractive distillation using a selective solvent (S) in a dividing wall column (TKW), wherein
  - the process is carried out in a dividing wall column (TKW) having a dividing wall (TW) which is aligned in the longitudinal direction of the column and extends to the upper end of the column and divides the interior of the column into a first region (1), a second region (2) and a lower combined column region (3),
  - the starting mixture (A) is fed into the first region (1), a first top stream (B) is taken off from the first region (1) and a second top stream (C) is taken off from the second region (2), with each of the streams having a prescribed specification,
  - the selective solvent (S) is introduced in the upper part of the first region (1) or in the upper part of the second region (2) and
  - the flow of solvent (S1) into the first region (1) or the flow of solvent (S2) into the second region (2) are set so that each of the prescribed specifications for the top streams (B, C) are met.
2. A process as claimed in claim 1, wherein a stream of the selective solvent (S1) is introduced only in the upper part of the first region (1).
3. A process as claimed in claim 1, wherein a stream of the selective solvent (S2) is introduced only in the upper part of the second region (2).
4. A process as claimed in any of claims 1 to 3, wherein a side stream (D) is taken off from the lower combined column region (3) and the laden solvent from the bottom of the column (SL) is degassed in a bottom vaporizer (V) and taken off as purified solvent stream (SR) and preferably recycled to the extractive distillation.
5. A process as claimed in any of claims 1 to 4, wherein one or more liquid streams or substreams is/are taken off from the dividing wall column (TKW) at one or more

thermodynamically suitable theoretical plates, partly or completely vaporized by heat transfer from the hot, degassed solvent stream (SR) and returned to the dividing wall column (TKW), preferably at the same theoretical plate from which the liquid stream or substream had been taken off.

6. The use of a process as claimed in any of claims 1 to 5 for fractionating hydrocarbon mixtures, in particular C<sub>4</sub> fractions, C<sub>5</sub> fractions or aromatic mixtures, preferably benzene/toluene/xylene mixtures or mixtures of the isomeric xylenes.